Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_\_\_\_

**Sex-Linkage Worksheet**

Ms. Ottolini, PreAP Biology

*Note: In fruit flies, eye color is a sex linked trait. Red is dominant to white.*

1. What are the sexes and eye colors of flies with the following genotypes:

XRXr \_\_\_\_\_\_\_\_\_\_\_\_\_ XRY \_\_\_\_\_\_\_\_\_\_\_\_ XrXr \_\_\_\_\_\_\_\_\_\_\_\_

XRXR \_\_\_\_\_\_\_\_\_\_\_\_ XrY \_\_\_\_\_\_\_\_\_\_\_\_

2. What are the genotypes of these flies:

white eyed, male \_\_\_\_\_\_\_\_\_\_\_\_ red eyed female (heterozygous) \_\_\_\_\_\_\_\_

white eyed, female \_\_\_\_\_\_\_\_\_\_\_ red eyed, male \_\_\_\_\_\_\_\_\_\_\_

4. Show a cross between a pure red eyed female and a white eyed male.

What are the genotypes of the parents:

\_\_\_\_\_\_\_\_\_\_\_& \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Offspring Phenotype %’s

white eyed, male \_\_\_\_

white eyed, female \_\_\_\_

red eyed, male \_\_\_\_

red eyed, female \_\_\_\_

5. Show the cross of a red eyed female (heterozygous) and a red eyed male. What are the genotypes

of the parents?

\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Offspring Phenotype %’s

white eyed, male\_\_\_\_

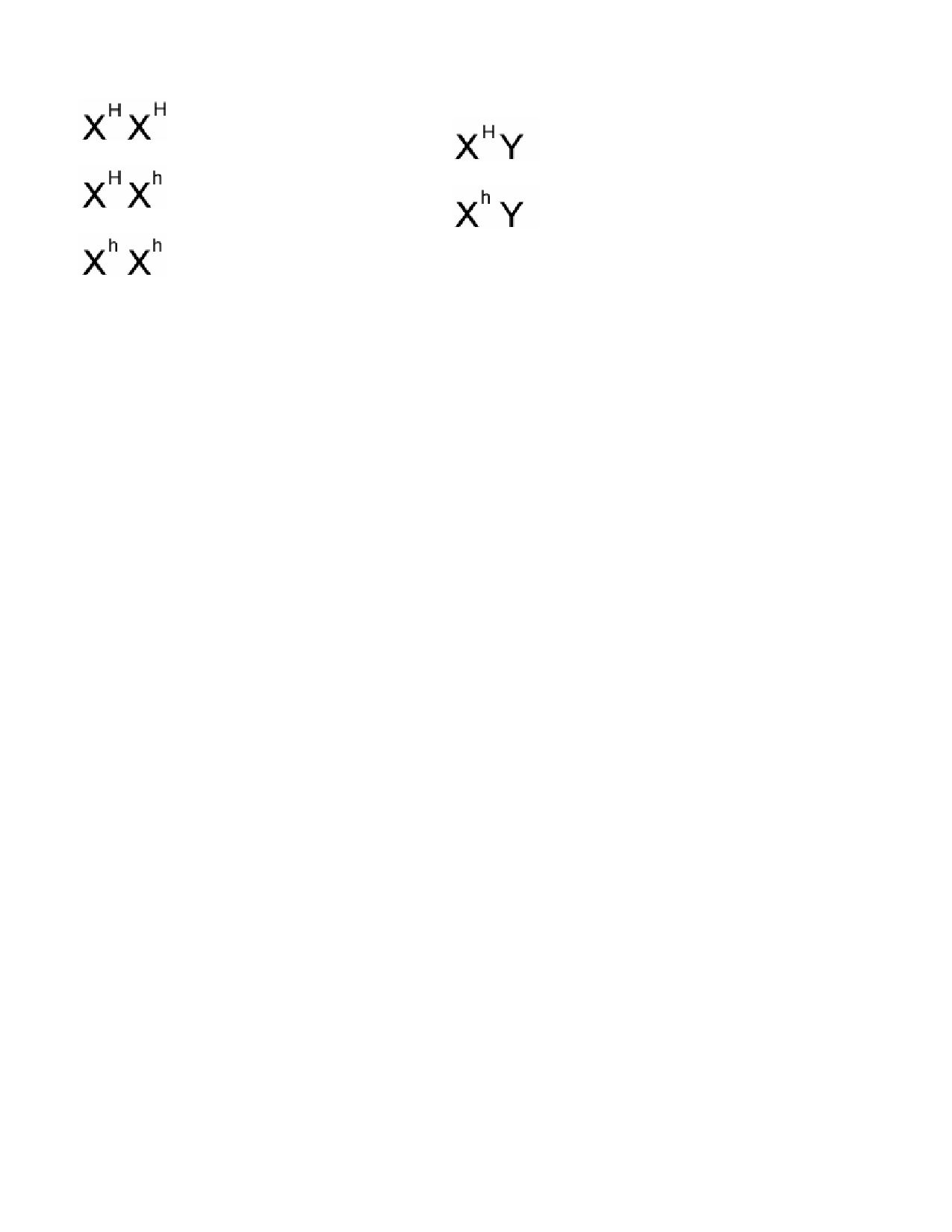
white eyed, female \_\_\_

red eyed, male \_\_\_\_

red eyed, female \_\_\_\_

6. In humans, hemophilia is a sex linked trait. Females can be normal, be a carrier for the disease, or have the disease. Males will either have the disease or not (but they won't ever be carriers)

= female, normal



= male, normal

= female, carrier

= male, hemophiliac

= female, hemophiliac

Show the cross of a man who has hemophilia with a woman who is a carrier.

What is the probability that their children will have the disease? \_\_\_\_\_\_\_\_\_\_

7. A woman who is a carrier marries a normal man. Show the cross. What is the probability (%)

that their children will have hemophilia? What sex will a child in the family with hemophilia be?

8. A woman who has hemophilia marries a normal man. What percentage of their children will have hemophilia, and what is their sex?

